

Union Calendar No. 449

110TH CONGRESS
2D SESSION

H. R. 2631

[Report No. 110–708, Part I]

To strengthen efforts in the Department of Homeland Security to develop nuclear forensics capabilities to permit attribution of the source of nuclear material.

IN THE HOUSE OF REPRESENTATIVES

JUNE 7, 2007

Mr. SCHIFF (for himself, Mr. LANGEVIN, Mr. ISRAEL, Mr. SHAYS, and Mr. THORNBERRY) introduced the following bill; which was referred to the Committee on Homeland Security, and in addition to the Committee on Foreign Affairs, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

JUNE 11, 2008

Additional sponsor: Mr. McCAUL of Texas

JUNE 11, 2008

Reported from the Committee on Homeland Security with amendments

[Strike out all after the enacting clause and insert the part printed in *italic*]

JUNE 11, 2008

Committee on Foreign Affairs discharged; committed to the Committee of the Whole House on the State of the Union and ordered to be printed

[For text of introduced bill, see copy of bill as introduced on June 7, 2007]

A BILL

To strengthen efforts in the Department of Homeland Secu-

rity to develop nuclear forensics capabilities to permit attribution of the source of nuclear material.

1 *Be it enacted by the Senate and House of Representa-*
 2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 *This Act may be cited as the “Nuclear Forensics and*
 5 *Attribution Act”.*

6 **SEC. 2. FINDINGS.**

7 *Congress finds the following:*

8 *(1) The threat of a nuclear terrorist attack on*
 9 *American interests, both domestic and abroad, is one*
 10 *of the most serious threats to the national security of*
 11 *the United States. In the wake of an attack, attribu-*
 12 *tion of responsibility would be of utmost importance.*
 13 *Because of the destructive power of the weapon, there*
 14 *could be little forensic evidence except the radioactive*
 15 *material in the bomb itself.*

16 *(2) Through advanced nuclear forensics, using*
 17 *both existing techniques and those under development,*
 18 *it may be possible to identify the source and pathway*
 19 *of a weapon or material after it is interdicted or deto-*
 20 *nated. Though identifying intercepted smuggled mate-*
 21 *rial is now possible in some cases, pre-detonation*
 22 *forensics is a relatively undeveloped field. The post-*
 23 *detonation nuclear forensics field is also immature,*
 24 *and the challenges are compounded by the pressures*

1 *and time constraints of performing forensics after a*
2 *nuclear or radiological attack.*

3 *(3) A robust and well-known capability to iden-*
4 *tify the source of nuclear or radiological material in-*
5 *tended for or used in an act of terror could also deter*
6 *prospective proliferators. Furthermore, the threat of*
7 *effective attribution could compel improved security*
8 *at material storage facilities, preventing the unwit-*
9 *ting transfer of nuclear or radiological materials.*

10 *(4)(A) In order to identify special nuclear mate-*
11 *rial and other radioactive materials confidently, it is*
12 *necessary to have a robust capability to acquire sam-*
13 *ples in a timely manner, analyze and characterize*
14 *samples, and compare samples against known signa-*
15 *tures of nuclear and radiological material.*

16 *(B) Many of the radioisotopes produced in the*
17 *detonation of a nuclear device have short half-lives, so*
18 *the timely acquisition of samples is of the utmost im-*
19 *portance. Over the past several decades, the ability of*
20 *the United States to gather atmospheric samples—*
21 *often the preferred method of sample acquisition has*
22 *diminished. This ability must be restored and modern*
23 *techniques that could complement or replace existing*
24 *techniques should be pursued.*

1 (C) *The discipline of pre-detonation forensics is*
2 *a relatively undeveloped field. The radiation associ-*
3 *ated with a nuclear or radiological device may affect*
4 *traditional forensics techniques in unknown ways. In*
5 *a post-detonation scenario, radiochemistry may pro-*
6 *vide the most useful tools for analysis and character-*
7 *ization of samples. The number of radiochemistry*
8 *programs and radiochemists in United States Na-*
9 *tional Laboratories and universities has dramatically*
10 *declined over the past several decades. The narrowing*
11 *pipeline of qualified people into this critical field is*
12 *a serious impediment to maintaining a robust and*
13 *credible nuclear forensics program.*

14 (5) *Once samples have been acquired and charac-*
15 *terized, it is necessary to compare the results against*
16 *samples of known material from reactors, weapons,*
17 *and enrichment facilities, and from medical, aca-*
18 *demic, commercial, and other facilities containing*
19 *such materials, throughout the world. Some of these*
20 *samples are available to the International Atomic*
21 *Energy Agency through safeguards agreements, and*
22 *some countries maintain internal sample databases.*
23 *Access to samples in many countries is limited by na-*
24 *tional security concerns.*

1 (6) *In order to create a sufficient deterrent, it is*
2 *necessary to have the capability to positively identify*
3 *the source of nuclear or radiological material, and po-*
4 *tential traffickers in nuclear or radiological material*
5 *must be aware of that capability. International co-*
6 *operation may be essential to catalogue all existing*
7 *sources of nuclear or radiological material.*

8 **SEC. 3. SENSE OF CONGRESS ON INTERNATIONAL AGREE-**
9 **MENTS FOR FORENSICS COOPERATION.**

10 *It is the sense of the Congress that the President*
11 *should—*

12 (1) *pursue bilateral and multilateral inter-*
13 *national agreements to establish, or seek to establish*
14 *under the auspices of existing bilateral or multilateral*
15 *agreements, an international framework for deter-*
16 *mining the source of any confiscated nuclear or radi-*
17 *ological material or weapon, as well as the source of*
18 *any detonated weapon and the nuclear or radiological*
19 *material used in such a weapon;*

20 (2) *develop protocols for the data exchange and*
21 *dissemination of sensitive information relating to nu-*
22 *clear or radiological materials and samples of con-*
23 *trolled nuclear or radiological materials, to the extent*
24 *required by the agreements entered into under para-*
25 *graph (1); and*

1 (3) develop expedited protocols for the data ex-
 2 change and dissemination of sensitive information
 3 needed to publicly identify the source of a nuclear det-
 4 onation.

5 **SEC. 4. RESPONSIBILITIES OF DOMESTIC NUCLEAR DETEC-**
 6 **TION OFFICE.**

7 (a) *ADDITIONAL RESPONSIBILITIES.*—Section 1902 of
 8 the Homeland Security Act of 2002 (as redesignated by
 9 Public Law 110–53; 6 U.S.C. 592) is amended—

10 (1) in subsection (a)—

11 (A) in paragraph (9), by striking “and”
 12 after the semicolon;

13 (B) by redesignating paragraph (10) as
 14 paragraph (14); and

15 (C) by inserting after paragraph (9) the fol-
 16 lowing:

17 “(10) develop and implement, with the approval
 18 of the Secretary and in coordination with the heads
 19 of appropriate departments and agencies, methods
 20 and capabilities to support the attribution of nuclear
 21 or radiological material to its source when such mate-
 22 rial is intercepted by the United States, foreign gov-
 23 ernments, or international bodies or is dispersed in
 24 the course of a terrorist attack or other nuclear or ra-
 25 diological explosion;

1 “(11) establish, within the Domestic Nuclear De-
2 tection Office, the National Technical Nuclear
3 Forensics Center to provide centralized stewardship,
4 planning, assessment, gap analysis, exercises, im-
5 provement, and integration for all Federal nuclear
6 forensics activities to ensure an enduring national
7 technical nuclear forensics capability to strengthen
8 the collective response of the United States to nuclear
9 terrorism or other nuclear attacks;

10 “(12) establish a National Nuclear Forensics Ex-
11 pertise Development Program which—

12 “(A) is devoted to developing and maintain-
13 ing a vibrant and enduring academic pathway
14 from undergraduate to post-doctorate study in
15 nuclear and geochemical science specialties di-
16 rectly relevant to technical nuclear forensics, in-
17 cluding radiochemistry, geochemistry, nuclear
18 physics, nuclear engineering, materials science,
19 and analytical chemistry; and

20 “(B) shall—

21 “(i) make available for undergraduate
22 study student scholarships, with a duration
23 of up to four years per student, which shall
24 include, whenever possible, at least one sum-
25 mer internship at a national laboratory or

1 *appropriate Federal agency in the field of*
2 *technical nuclear forensics during the course*
3 *of the student's undergraduate career;*

4 “(ii) *make available for graduate study*
5 *student fellowships, with a duration of up*
6 *to five years per student, which—*

7 “(I) *shall include, whenever pos-*
8 *sible, at least two summer internships*
9 *at a national laboratory or appro-*
10 *priate Federal agency in the field of*
11 *technical nuclear forensics during the*
12 *course of the student's graduate career;*
13 *and*

14 “(II) *shall require each recipient*
15 *to commit to serve for two years in a*
16 *post-doctoral position in a technical*
17 *nuclear forensics-related specialty at a*
18 *national laboratory or appropriate*
19 *Federal agency after graduation;*

20 “(iii) *make available to faculty*
21 *awards, with a duration of three to five*
22 *years each, to ensure faculty and their grad-*
23 *uate students a sustained funding stream;*
24 *and*

1 “(iv) place a particular emphasis on
 2 reinvigorating technical nuclear forensics
 3 programs, while encouraging the participa-
 4 tion of undergraduate students, graduate
 5 students, and university faculty from his-
 6 torically Black colleges and universities,
 7 Hispanic-serving institutions, and Tribal
 8 Colleges and Universities;

9 “(13) provide an annual report to Congress on
 10 the activities carried out under paragraphs (10), (11),
 11 and (12); and”;

12 (2) by adding at the end the following new sub-
 13 section:

14 “(b) *DEFINITIONS.*—In this section:

15 “(1) *HISTORICALLY BLACK COLLEGE OR UNIVER-*
 16 *SITY.*—The term ‘historically Black college or univer-
 17 sity’ has the meaning given the term ‘part B institu-
 18 tion’ in section 322(2) of the Higher Education Act
 19 of 1965 (20 U.S.C. 1061(2)).

20 “(2) *HISPANIC-SERVING INSTITUTION.*—The term
 21 ‘Hispanic-serving institution’ has the meaning given
 22 that term in section 502 of the Higher Education Act
 23 of 1965 (20 U.S.C. 1101a).

24 “(3) *TRIBAL COLLEGE OR UNIVERSITY.*—The
 25 term ‘Tribal College or University’ has the meaning

1 *given that term in section 316(b) of the Higher Edu-*
2 *cation Act of 1965 (20 U.S.C. 1059c(b)).”.*

3 **(b) AUTHORIZATION OF APPROPRIATIONS.**—*There is*
4 *authorized to be appropriated the sum of \$30,000,000 for*
5 *each of the fiscal years 2009, 2010, and 2011 to carry out*
6 *paragraphs (10) through (13) of section 1902(a) of the*
7 *Homeland Security Act of 2002, as added by subsection (a)*
8 *of this section.*

Amend the title so as to read: “A bill to strengthen efforts in the Department of Homeland Security to develop nuclear forensics capabilities to permit attribution of the source of nuclear material, and for other purposes.”.

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